

### **REMARKS**

The foregoing amendment and the following arguments are provided generally to impart precision to the claims, by more particularly pointing out the invention, rather than to avoid prior art.

Claims 173-195 are pending in this application. Claims 173-195 have been rejected. In this response, claims 173, 182, 184, 185, 188-191, and 195 have been amended. No new matter has been added. Reconsideration and withdrawal of the rejections set forth in the Office Action dated September 29, 2008, are respectfully requested in view of the remarks below.

### **Interview Summary Statement**

A telephonic interview was conducted between Examiner Wensing W. Kuo, Examiner Leonardo Andujar, and applicant's representative, Yenyun Fu. The undersigned representative wishes to thank Examiner Kuo for the telephonic interview conducted on October 28, 2008.

During the interview, independent claim 173, references Hauer, et al. (U.S. Pat. No.5,600,741) and Aihara (U.S. Pub. No.: 2001/0004413) were discussed. Examiner Kuo and Andujar recommended that applicant emphasize the difference between the claimed 'optical reflector assembly disposed in the notch' and the reflective surfaces described in the cited references.

Applicant herein submits the amendments based on the discussion with the Examiner. Such amendments are reflected in independent claim 173. No particular agreement was reached during this interview.

**35 U.S.C. §102 Rejections**

**Claims 173-176, 178, 181 and 192-195**

The Examiner rejected claims 173-176, 178, 181, and 192-195 under 35 U.S.C. §102(b) as being allegedly anticipated by *Hauer, et al.* (U.S. Patent No. 5,600,741 hereinafter referred to as 'Hauer'). Applicant respectfully disagrees.

***The cited reference does not disclose the subject matter taught in independent claim 173***

To anticipate a claim, the reference must teach every element of the claim.

*"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)*

Applicant respectfully submits that Hauer does not anticipate Applicant's independent claim 173 since Hauer does not disclose each and every element of independent claim 173.

***Hauer does not disclose "an optical reflector assembly disposed within the notch; wherein, the optical reflector is formed from a substrate" (Claim 1)***

Hauer describes an "arrangement for coupling optoelectronic components and optical waveguides to one another" (Title, Hauer). The arrangement of Hauer "for coupling electronic components and optical waveguides to one another includes a carrier substrate (11); at least one optoelectronic component (9) or one optical waveguide (1) secured on the carrier substrate (11) and at least one lens (8) provided with an essentially planar surface" (Abstract, Hauer).

Hauer, however, does not teach that an integrated circuit comprises "a semiconductor substrate having a notch extending from a second surface of the semiconductor substrate towards

the first surface; .... wherein, the optical reflector assembly is formed from a substrate...", as claimed in independent claim 173.

The Examiner states that "Hauer teaches an integrated circuit, comprising: ... An optical reflector assembly disposed within the notch..." (Pages 2-3 of Office Action mailed September 29, 2008). Applicant respectfully disagrees.

For example, in Hauer:

"The beams 51, 52, shaped and directed by the hemispherical lens 8, is totally **reflected and refracted, respectively, at the surfaces 91 and 92** and is incident on the end face of an optical waveguide 93. Apart from the surfaces 91 and 92, any other suitable beam deflection device can be used for beam deflection..., for example a **mirrored surface**." (Col. 6, lines 63-67 and Col. 7, lines 1-4)

Hauer discusses two **surfaces** suitable for reflecting and refracting light where the surface may be a mirrored surface. However, the surfaces for reflecting light in Hauer are interfaces formed between the semiconductor and the edge of a groove formed in a semiconductor (e.g., the interface between air and semiconductor in Figure 1 and 5 of Hauer).

Thus, the reflective surfaces formed from a air/semiconductor interfaces are different from an optical reflector assembly, in particular, an optical reflector assembly disposed within a notch formed in a semiconductor substrate, as claimed.

Hauer does not disclose "an optical reflector assembly **disposed within** a notch", as claimed by applicant. Furthermore, Hauer does not disclose that "the optical reflector assembly is formed from a substrate", as claimed by applicant.

Applicant submits that independent claim 173 is not anticipated by Hauer. Applicant further submits that claim 173 is not rendered obvious over Hauer and/or the additional art of record. Since the cited reference does not show each and every aspect of the independent claim 173, the withdrawal of the rejections under 35 U.S.C. § 102(b) is thus respectfully requested.

**35 U.S.C. § 103 Rejections**

**Claims 185-186**

The Examiner has rejected claims 185 and 186 under 35 U.S.C. §103(a) as being allegedly unpatentable over Hauer in view of Aihara as applied to claim 182, and further in view of Meyers, et al. (U.S. Patent No.: 4,451,119, hereinafter referred to as 'Meyers'). Applicant respectfully disagrees.

Neither of Hauer, Aihara, nor the combination of Hauer and Aihara teaches that the optical reflector assembly is disposed within the notch and that the optical reflector assembly is formed from a substrate, as claimed by applicant.

The Examiner acknowledges this.

The Examiner states that "Hauer as modified by Aihara fail to teach that the optical reflector assembly comprises a glass substrate in contact with the curved mirror" (Page 9 of Office Action mailed September 29, 2008).

However, the Examiner states that "It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the optical reflector assembly of Hauer as modified by Aihara with the glass substrate of Meyers for the benefit of providing a mirror with high optical quality suitable for high thermal energy applications. (Page 9 of Office Action mailed September 29, 2008)" Applicant respectfully disagrees.

Hauer, as discussed, does not disclose an optical reflector assembly that is disposed within a notch and is formed from a substrate, as claimed by applicant.

Aihara does not cure the deficiency.

Aihara, like Hauer teaches a reflective surface ("... total reflection of the emitted light from the light emitting device 37 occurs on the reflecting surface 34 of the transparent structure 31...", par. [0036], Aihara) and also does not teach the claimed subject matter of "an optical reflector assembly **disposed within the notch**... wherein, the optical reflector assembly is

**formed from a substrate"**.

Meyers does not cure the deficiency.

The Examiner states that "Meyers (e.g., Figure 1) teaches that an optical reflector assembly comprises a glass substrate 20 in contact with a mirror 22 in order to provide a mirror with high optical quality suitable for high thermal energy applications (Page 9 of Office Action mailed September 29, 2008)." Applicant respectfully disagrees.

Meyers teaches a "composite mirror and method of construction" (Title, Meyers) and is unrelated to integrated circuits. The composite mirror of Meyers comprises "(1) a substrate of carbon-carbon, (2) intermediate layers of silicon carbide, silicon dioxide, (3) optically polished layers of metals and/or suitable glass (ultralow-expansion or modified fused-silica glass) and (4) an optical coating of high reflectivity (Abstract, Meyers)".

Meyers does not teach that the composite mirror is for use in an integrated circuit nor that the composite mirror is "disposed within a notch", as claimed by applicant. Furthermore, applicant submits that the high thermal energy application of Meyer's composite mirror is not relevant to the subject matter recited in applicant's independent claim 173.

Thus, even if Hauer, Aihara, and Meyers were combined, the resulting disclosure would be different from what is claimed by applicant in claim 173. The combination still would not include at least the claimed subject matter of, "an optical reflector assembly **disposed within the notch**... wherein, the optical reflector assembly is **formed from a substrate**".

Regarding claim 185, even if Hauer, Aihara, and Meyers were combined, the resulting disclosure would be different from what is claimed by applicant in claim 173. Furthermore, the combination would not include an optical reflector assembly disposed within the notch, wherein the optical reflector assembly is formed from a substrate, wherein the substrate is a glass substrate", as claimed in claim 185.

Regarding claim 186, even if Hauer, Aihara, and Meyers were combined, the resulting disclosure would be different from what is claimed by applicant in claim 173. Furthermore, the combination would not include an optical reflector assembly disposed within the notch, wherein the optical reflector assembly is formed from a substrate, wherein the optical reflector assembly is coupled to the notch at the at least one inclined surface via an optical adhesive attaching the glass substrate to the at least one inclined surface", as claimed in claim 186.

Since none of the references teach that the optical reflector assembly is disposed within the notch, there is no need for an adhesive nor is there a logical fashion with which the references would describe how the optical assembly is attached to the notch.

Specifically, Hauer, Aihara, and Meyers individually and the combination of Hauer, Aihara, and Meyers fail to teach that "the optical reflector assembly is coupled to the notch at the at least one inclined surface via an **optical adhesive attaching the glass substrate to the at least one inclined surface**", as claimed in claim 186.

Thus, without admitting to the propriety of combining Hauer, Aihara, and Meyers in a way presented in the Office action, applicant respectfully submits that independent claim 173 and dependent claims 185-186 are patentable over Hauer, Aihara, and Meyers, and over the combination of Hauer, Aihara, and Meyers, at least for the above stated reasons.

The withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested for claims 173, 185-186.

**Dependent Claims**

**Dependent Claims 173-176, 178, 181, and 192-195**

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, applicant's silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim. Therefore, the remaining dependent claims are also patentable over the cited references.

The withdrawal of the rejections under 35 U.S.C. §102(b) is respectfully requested for dependent claims 173-176, 178, 181, and 192-195.

**Dependent Claims 177, 179, 180, and 182-191**

The Examiner has rejected claim 180 under 35 U.S.C. §103(a) as being allegedly unpatentable over Hauer. Applicant respectfully disagrees.

The Examiner has rejected claims 177, 179 and 188-191 under 35 U.S.C. §103(a) as being allegedly unpatentable over Hauer in view of Reedy, et al. (U.S. Patent No. 6,869,229, hereinafter referred to as 'Reedy'). Applicant respectfully disagrees.

The Examiner has rejected claims 182-184 under 35 U.S.C. §103(a) as being allegedly unpatentable over Hauer in view of Aihara (U.S. Pub. No. 2001/0004413, hereinafter referred to as 'Aihara'). Applicant respectfully disagrees.

The Examiner has rejected claims 185 and 186 under 35 U.S.C. §103(a) as being allegedly unpatentable over Hauer in view of Aihara as applied to claim 182, and further in view of Meyers, et al. (U.S. Patent No.: 4,451,119, hereinafter referred to as 'Meyers'). Applicant respectfully disagrees.

The Examiner has rejected claim 187 under 35 U.S.C. §103(a) as being allegedly unpatentable over Hauer as modified by Aihara and Meyers as applied to claim 186 and further in view of Reedy. Applicant respectfully disagrees.

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, applicant's silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim. Therefore, the remaining dependent claims are also patentable over the cited references.

The withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested for dependent claims 177, 179, 180, and 182-191.

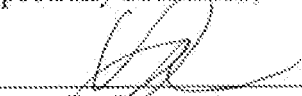


Response to Office Action dated September 29, 2008

The Commissioner is authorized to charge underpayment in fees to Deposit Account No. 50-2207, under Order No. 66518-8002.US02 from which the undersigned is authorized to draw.

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Respectfully submitted,

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